Claims

1. A radiation-emitting semiconductor component with a layer structure comprising
- an n-doped confinement layer (14; 34),
- a p-doped confinement layer (22; 38), and
- an active, photon-emitting layer (18; 36) disposed between said n-doped confinement layer (14; 34) and said p-doped confinement layer (22; 38),
characterized in that
- said n-doped confinement layer (14; 34) is doped with a first n-dopant for producing high active doping and/or a sharp doping profile and
- said active layer (18; 36) is doped with a second n-dopant, different from the first dopant, for improving the layer quality of said active layer.

2. The radiation-emitting semiconductor component as recited in claim 1, characterized in that said first n-dopant serves to produce high active doping and/or a sharp doping profile.

3. The radiation-emitting semiconductor component as recited in claim 1 or 2, characterized in that said second n-dopant serves to improve the layer quality of said active layer (18; 36).

4. The radiation-emitting semiconductor component as recited in one of claims 1 to 3, characterized in that said n-doped confinement layer (14; 34) is doped both with said first n-dopant and with an additional dopant, particularly with said second n-dopant.

5. The radiation-emitting semiconductor component as recited in one of claims 1 to 4, characterized in that said semiconductor component is an LED (30).

6. The radiation-emitting semiconductor component as recited in claim 5, characterized in that said active layer (36) of said LED is formed by a homogeneous layer.

7. The radiation-emitting semiconductor component as recited in claim 5, characterized in that said active layer (36) of said LED is formed by a quantum well or a multiple quantum well.

8. The radiation-emitting semiconductor component as recited in one of claims 1 to 4, characterized in that said semiconductor component is a laser diode (10) in which a first waveguide layer (16) is disposed between said active layer (18) and said n-doped confinement layer (14) and a second waveguide layer (20) is disposed between said active layer (18) and said p-doped confinement layer (22).

9. The radiation-emitting semiconductor component as recited in claim 8, characterized in that said first waveguide layer (16) is undoped.

10. The radiation-emitting semiconductor component as recited in claim 8, characterized in that said first waveguide layer (16) is doped with said second n-dopant.

11. The radiation-emitting semiconductor component as recited in one of claims 8 to 10, characterized in that said second waveguide layer (20) is undoped.

12. The radiation-emitting semiconductor component as recited in one of claims 1 to 11, characterized in that silicon is used as said first n-dopant.

13. The radiation-emitting semiconductor component as recited in one of claims 1 to 12, characterized in that telluride is used as said second n-dopant.

14. The radiation-emitting semiconductor component as recited in one of claims 1 to 13, characterized in that said p-doped confinement layer (22; 38) is doped with magnesium, carbon or zinc.

15. The radiation-emitting semiconductor component as recited in one of claims 1 to 14, characterized in that said layer structure (14-22; 34-38) is formed on the basis of AlInGaP, AlGaAs, InGaAlAs or InGaAsP.